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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,695	10/17/2000	Junichi Matsumoto	PM 274443 SPO-2431	2041

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EXAMINER

LONG, HEATHER R

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,695

Applicant(s)

MATSUMOTO, JUNICHI

Examiner

Heather R Long

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 10/18/1999. It is noted, however, that applicant has not filed a certified copy of the HEI 11-295701 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arisaka et al. (JP 1022174 A) in view of Matsumoto (U.S. Patent 5,446,514) and further in view of SanGregory et al. (U.S. Patent 5,432,576).

Regarding claim 1, Arisaka et al. discloses in Figs. 1 and 3 a shutter for digital still cameras, comprising: a motor (6) having a stator including an energizing coil (6c), having a rotor constituted by a two-pole permanent magnet (6e) and capable of reciprocatingly moving by a predetermined rotational angle correspondingly to a direction in which a current is supplied to the coil (6c), and having a driving pin (6f) integrally provided with the rotor and extending in parallel with a rotation shaft of the rotor; two shutter blades (4 and 8) capable of being relatively moved by the driving pin to open and close an exposure aperture; and a plurality of magnetic holding means (1d and 1c) respectively disposed against each magnet pole of the rotor, and configured so that an attractive force caused from a magnetic force of the rotor acting between the rotor and each of the plurality of magnetic holding means (1d and 1c) is exerted to rotate the rotor in

either direction from a midpoint angular position in the rotational angle (Abstract: Solution). However, Arisaka et al. fails to disclose a forcing means capable of directly or indirectly preventing rotation of the rotor, and maintaining a small-diameter exposure aperture regulating state by the two shutter blades in cooperation with the attractive force, when energization of the coil is interrupted at an exposure aperture regulating position at which the rotor rotates beyond the midpoint angular position by a predetermined angle.

Referring to the Matsumoto reference, Matsumoto discloses in Fig. 1 a shutter for a camera, comprising a motor (15) having a stator (15d) including an energizing coil (15c), having a rotor constituted by a two-pole permanent magnet (15b) and capable of reciprocatingly moving by a predetermined rotational angle correspondingly to a direction in which a current is supplied to the coil (15c), and having a driving pin (15e) integrally provided with the rotor and extending in parallel with a rotation shaft of the rotor; two shutter blades (2 and 3) capable of being relatively moved by the driving pin (15e) to open and close an exposure aperture; a magnetic holding means (16); and forcing means (8 and 12) capable of directly or indirectly preventing rotation of the rotor when energization of the coil (15c) is interrupted at an exposure aperture regulating position at which the rotor rotates beyond the midpoint angular position by a predetermined angle (col. 2, lines 7-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Matsumoto

with Arisaka et al. in order to provide a shutter blades drive mechanism for photographic cameras which is configured so as to be capable of securely keeping shutter blades in closed positions thereof without requiring a particular space. However, Arisaka et al. in view of Matsumoto fails to teach a shutter means that can maintain a small-diameter exposure aperture regulating state by the two shutter blades in cooperation with the attractive force.

Referring to the SanGregory et al. reference, SanGregory et al. discloses in Fig. 3 a shutter for a camera, wherein the two shutter blades maintain a small-diameter exposure aperture in cooperation with the attractive force (col. 3, lines 4-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of SanGregory et al. with Arisaka et al. in view of Matsumoto in order increase accuracy and simplify the shutter design by using an attractive force to hold the two shutter blades in place.

Regarding claim 2, Matsumoto discloses a shutter for digital cameras, wherein the urging force of the forcing means (8 and 12) which acts so as to cause the rotor and the two shutter blades (2 and 3) to operate to the midpoint angular position, hardly acts at a position where the rotor stops after the rotor rotates beyond the exposure aperture regulating position in a direction opposite to the midpoint angular position (col. 2, lines 7-32).

Regarding claim 3, Matsumoto discloses in Fig. 1 a shutter for a digital still camera, wherein the forcing means are two torsion springs (8 and 12) and adapted to be directly in contact with the two shutter blades (2 and 3).

Allowable Subject Matter

3. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter: prior art fails to teach or suggest a shutter for digital still cameras, wherein the forcing means is a torsion spring wound around the shaft outside a blade chamber, and wherein the small-diameter aperture regulating state, which is caused by the two shutter blades, is maintained in a state in which both end portions of the torsion spring are positioned respectively on an operating locus of each of the two shutter blades in the blade chamber and are engaged with at least one of two base plates of the blade chamber.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R Long whose telephone number is 703-305-0681. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri.: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HRL
February 18, 2004


NGOC-YEN VU
PRIMARY EXAMINER